
BIOGRAPHICAL SKETCH

NAME Shelly Renae Peyton	POSITION TITLE Assistant Professor		
EDUCATION/TRAINING			
INSTITUTION AND LOCATION	DEGREE	MM/YY	FIELD OF STUDY
Northwestern University	B.S.	06/02	Chemical Engineering
University of California, Irvine	M.S.	06/04	Chemical Engineering
University of California, Irvine	Ph.D.	06/07	Chemical Engineering
Massachusetts Institute of Technology		12/10	Biological Engineering

B. Positions and Honors

Positions and Employment

2002-2007	Graduate Fellow, Department of Chemical Engineering and Materials Science, University of California, Irvine
2007-2010	Postdoctoral Fellow, Department of Biological Engineering, Massachusetts Institute of Technology
2011-	Assistant Professor, Department of Chemical Engineering, University of Massachusetts, Amherst

Other Experience and Professional Memberships

Memberships

2004-	Member, American Institute of Chemical Engineers
2004-	Member, Biomedical Engineering Society
2008-	Member, Society for Biomaterials
2007-	Member, American Association for the Advancement of Science
2011-	Member, Institute for Cellular Engineering, University of Massachusetts, Amherst.
2011-	Member, Chemistry-Biology Interface Program, University of Massachusetts, Amherst.
2011-	Member, Materials Research Science and Engineering Center, University of Massachusetts, Amherst

Other Experience

Scientific Article/Manuscript Reviewer for: Tissue Engineering, Biomaterials, Acta Biomaterialia, Langmuir, Journal of Biomaterials Science, and Journal of Biomedical Materials Research.

Session Chair, Biomedical Engineering Society Annual Meeting. Cell-Biomaterial Interfaces. October 2010.

Abstract Reviewer, Society for Biomaterials Annual Meeting. 2011.

Discussion Leader, Macromolecular Materials Gordon Research Conference. Biomimetic materials – from assembly to *in vivo* applications. January 2011.

Review Panel, National Defense Science and Engineering Graduate Fellowship. February 2011

Course Design, Bioengineering for Chemical Engineers. To be integrated into core course curriculum for UMass-Amherst Chemical Engineering Fall 2011.

Honors

National Institutes of Health/Ruth L. Kirchstein (NIGMS) Postdoctoral Fellow (2008-2010)

Graduate Assistantship in Areas of National Need (GAANN) Fellow (2006-07)

Biomedical Engineering Society Outstanding Graduate Student Research Award (2005)

National Achievement Rewards for College Scientists (ARCS) Foundation, Inc. Fellow (2004-06)

C. Selected Peer-reviewed Publications

1. S.R. Peyton, Z.I. Kalcioğlu, J.D. Cohen, A.P. Runkle, K.J. VanVliet, D.A. Lauffenburger, and L.G. Griffith (2011) "Marrow-derived stem cell motility in 3D synthetic scaffold is governed by geometry along with adhesivity and stiffness." *Biotechnology and Bioengineering*. DOI: 10.1002/bit.23027
2. C.M. Williams, G. Mehta, S.R. Peyton, A.S. Zeiger, K.J. VanVliet, and L.G. Griffith (2011) "Micropatterned semi-synthetic hydrogel arrays create a 3D niche for autocrine-induced tissue formation." *Tissue Engineering Part A*. doi:10.1089/ten.TEA.2010.0398
3. P.D. Kim, S.R. Peyton, A.J. VanStrien, and A.J. Putnam (2009) "The influence of ascorbic acid, TGF- β 1, and cell-mediated remodeling on the bulk mechanical properties of 3-D PEG-fibrinogen constructs." *Biomaterials*. Aug;30(23-24):3854-64
4. C.B. Khatiwala, P.D. Kim, S.R. Peyton, and A.J. Putnam (2009) "ECM compliance regulates osteogenesis by influencing MAPK signaling downstream of RhoA and ROCK." *Journal of Bone and Mineral Research*. May;24(5):886-98.
5. S.R. Peyton, P.D. Kim, C.M. Ghajar, D. Seliktar, and A.J. Putnam (2008) "The effects of matrix stiffness and RhoA on the phenotypic plasticity of smooth muscle cells in a 3-D biosynthetic hydrogel system." *Biomaterials*. Jun;29(17):2597-607.
6. C.B. Khatiwala, S.R. Peyton, and A.J. Putnam. (2007) "The regulation of osteogenesis by ECM rigidity in MC3T3-E1 cells requires MAPK activation." *Journal of Cellular Physiology*. 211: 661-672.
7. S.R. Peyton, C.M. Ghajar, C.B. Khatiwala, and A.J. Putnam. (2007) "The emergence of ECM mechanics and cytoskeletal tension as important regulators of cell function." *Cell Biochemistry and Biophysics*. Apr;47(2):300–320.
8. C.M. Ghajar, V. Suresh, S.R. Peyton, C.B. Raub, F.L. Meyskens Jr., S.C. George, and A.J. Putnam. (2007) "A novel 3-D model to quantify metastatic melanoma invasion." *Molecular Cancer Therapeutics*. Feb;6(2):552-561.
9. S.R. Peyton, C.B. Raub, V.P. Keschrumrus, and A.J. Putnam. (2006) "The use of poly(ethylene glycol) hydrogels to investigate the impact of ECM chemistry and mechanics on smooth muscle cells." *Biomaterials*. Oct;27(28):4881-93.
10. C. Khatiwala, S.R. Peyton, and A.J. Putnam. (2006) "The effects of the intrinsic mechanical properties of the extracellular matrix on the behavior of pre-osteoblastic MC3T3-E1 cells." *AJP-Cell Physiology*. 290(6):C1640-50.
11. S.R. Peyton and A.J. Putnam. (2005) "Extracellular matrix rigidity governs smooth muscle cell motility in a biphasic fashion." *Journal of Cellular Physiology*. 204(1):198-209.